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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,187	06/29/2001	Eric J. Horvitz	MS164185.1	9560

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EXAMINER	
SHORTLEDGE, THOMAS E	

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/896,187	HORVITZ ET AL.	
	Examiner	Art Unit	
	Thomas E. Shortledge	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,20,21,29 and 55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,20,21,29 and 55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Remarks, filed 04/24/2006.

2. Claims 1-16, 20-21, 29 and 55 are pending. Claims 17-19, 22-28 and 30-54 have been canceled. Claims 1, 29 and 55 are independent.

Response to Arguments

3. Applicant's arguments with respect to claims 1, 29 and 55 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-16, 20-21, 29 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman et al. (Inferring Informational Goals from Free-Text Queries: A Bayesian Approach) in view of Miller et al. (6,741,188).

As to claims 1 and 29, Heckerman et al. teach:

a query subsystem that receives at least one of a query and an extrinsic data, the query subsystem is operatively coupled to an inference model and a knowledge data store, the query subsystem comprising (an input query with a user model, where a goal is inferred based on the query and the user model, section 4.2, col. 1 and 2 and section 2, col. 1 and 2);

a natural language processor that parses the query (parsing the inputted text, fig. 6);

an inference engine that infers one or more informational goal based, at least in part, on at least one of the query, the extrinsic data and an inference data store in the inference model (inferring a goal based on an input query and the user model, section 4.2, col. 1 and 2, and section 2, col. 1 and 2).

Heckerman et al. do no teach the inference engine further inferring one or more preferred levels of detail for an answer based on at least one of an inferred age of a user, a physical location of the user, and an application being employed by the user.

However, Miller at al. teach inferring a level of detail to provide to the user by limiting a user's search to a physical location of the user (col. 11, lines 27-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the query expansion of Heckerman et al. with the query expansion based on location of Miller et al. to provide a user with relevant information that is related to a practical area the user may happen to be in, as taught by Miller et al. (col. 3, lines 47-50).

As to claim 55, Heckerman et al. teach:

a natural language processing component that produces a linguistic data concerning one or more linguistic features (parsing the inputted text, fig. 6);

a tagging component that manipulates the linguistic data (tagging features of the input, section 4.2, col. 1 and 2);

one or more taggers that manipulates the linguistic data (taggers that manipulate the linguistic data into different usage terms, section 4.2, col. 1 and 2); and

wherein the inference model stores information concerning conditional probabilities associated with the likelihood that one or more informational goals exist, where the conditional probabilities of the informational goals are determined, at least in part, from Bayesian statistical analysis performed on the linguistic data (conditional probabilities are found for the informational goals and stored based on a Bayesian model, section 4.2, col. 4).

Heckerman et al. do no teach the inference engine further inferring one or more preferred levels of detail for an answer based on at least one of an inferred age of a user, a physical location of the user, and an application being employed by the user.

However, Miller at al. teach inferring a level of detail to provide to the user by limiting a user's search to a physical location of the user (col. 11, lines 27-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the query expansion of Heckerman et al. with the query expansion based on location of Miller et al. to provide a user with relevant information

that is related to a practical area the user may happen to be in, as taught by Miller et al. (col. 3, lines 47-50).

As to claim 2, Heckerman et al. teach the informational goals include at least one of a type of information requested in the query, a topic of the query, and a focal point of the query (the goal is related to the information requested, section 2, col. 1 and 2).

As to claim 3, Heckerman et al. teach:

an input query log that stores at least one of, one or more queries and one or more pieces of extrinsic data (queries are stored, section 2, col. 4); and

a learning system operatively coupled to the input query log, the learning system operable to produce the inference model (updating the user model using a Bayesian process, section, 2, col. 1 and 4).

As to claim 4, Heckerman et al. teach:

the natural language processor further produces linguistic data concerning one or more linguistic features (linguistic data concerning one or more linguistic features is produced, section 4.3, col. 1);

a tagging tool that facilitates manipulating the linguistic data (tagging features of the input, section 4.2, col. 1 and 2);

one or more taggers that manipulates the linguistic data (taggers that manipulate the linguistic data into different usage terms, section 4.2, col. 1 and 2); and

wherein the inference model stores information concerning conditional probabilities associated with the likelihood that one or more informational goals exist, where the conditional probabilities of the informational goals are determined, at least in part, from Bayesian statistical analysis performed on the linguistic data (conditional probabilities are found for the informational goals and stored based on a Bayesian model, section 4.2, col. 4).

As to claim 5, Heckerman et al. teach the linguistic data comprises a parse tree, where the parse tree contains extractable information concerning the nature of and relationships between observable linguistic features (creating a model of the linguistic features, with different levels, to extract information concerning the relationships between the words of the inputted query, section. 4.2, col. 4).

As to claim 6, Heckerman et al. teach the observable linguistic features in the extractable information comprise word-based features, structural features and hybrid linguistic features (the linguistic features contain word-based features, structural features and features that contain a combination, creating a hybrid, section 4.2. col. 2).

As to claim 7, Heckerman et al. teach the word-based features indicate the presence of one or more candidate terms that can be employed in predicting informational goals (depending on the terms present, different goals are inferred, section 4.2 col. 2).

As to claim 8, Heckerman et al. teach the taggers manipulate the linguistic data to conform with one or more schemas associated with reasoning concerning the relevance of a part of a query based on one or more language models (different language models are used to determine the relevance of the linguistic data in predicting the goals, col. 2, section 4.2).

As to claim 9, Heckerman et al. the taggers supervise learning associated with computing probabilities associated with the informational goals (the taggers determine which goals are inferred and the probabilities come from that, col. 2, section 4.2).

As to claim 10, Heckerman et al. teach the inference model represents a probabilistic dependency model (the inference model is represented by a probably model, section 2, col. 4).

As to claim 11, Heckerman et al. teach the inference comprises one or more decision trees, the decision trees store conditional probabilities associated with one or more informational goals, the decision trees being traversable by the linguistic data (decision trees are used to compare probabilities of inferred goals, the linguistic data traverses the data to find the goals, section 2, col. 4, and section 4.2 col. 2).

As to claim 12, Heckerman et al. teach the input query log is at least one of a data store a manual store (section 2, col. 4).

As to claim 13, Heckerman et al. teach the natural language processor parses a query into one or more parts suitable for retrieving one or more conditional probabilities stored in the reference model (fig. 6).

As to claim 14, Heckerman et al. teach one or more parts comprise at least one of, logical forms, adjectival phrases, noun phrases, verb phrases, propositional phrases and parse trees (fig. 6, col. 2 section 4.2).

As to claim 15, Heckerman et al. teach the inference engine further infers one or more informational goals based, at least in part, on at least one of the query, the extrinsic data, the one or more parts, and the one or more conditional probabilities stored in the inference model (the inference engine infers goals based on the query and the user model, along with probabilities stored, section 2, col. 1-4).

As to claim 16, Heckerman et al. teach the query subsystem further comprises an answer generator that produces a response to the query and produces an error message (section 5.2).

As to claim 20, Heckerman et al. teach the knowledge data store is searchable for information responsive to a new query and where the information retrieved will depend, at least in part, on the inferred informational goals (searching a database based on the inferred goals to find an answer to the inputted query, section 5.2).

As to claim 21, Heckerman et al. teach the query subsystem is compiled into an executable, and where the executable accepts as input one or more query distinctions (an executable function answers the query, section 1).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas E. Shortledge whose telephone number is (571)272-7612. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER

TS
6/28/06